DIAMOND (INDUSTRIAL)[1]

(Data in million carats unless otherwise specified)

Domestic Production and Use: In 2024, total domestic primary production of manufactured industrial diamond bort, grit, and dust and powder was estimated to be 160 million carats with a value of $53 million, which was a 5% increase from the quantity and value in 2023. No industrial diamond stone was produced domestically. One company with facilities in Florida and Ohio and a second company in Pennsylvania accounted for all domestic primary production. At least four companies produced polycrystalline diamond from diamond powder. At least two companies recovered used industrial diamond material from used diamond drill bits, diamond tools, and other diamond-containing wastes for recycling. The major consuming sectors of industrial diamond are computer chip production; construction; drilling for minerals, natural gas, and oil; machinery manufacturing; stone cutting and polishing; and transportation (infrastructure and vehicles). Highway building, milling, and repair and stone cutting consumed most of the industrial diamond stone. About 99% of U.S. industrial diamond apparent consumption was synthetic industrial diamond because its quality can be controlled, and its properties can be customized.

Salient Statistics—United States:	2020	2021	2022	2023	2024[e]
Bort, grit, and dust and powder; natural and synthetic:					
Production:					
Manufactured diamond[e]	130	132	150	152	160
Secondary	35.0	1.20	14.4	14	14
Imports for consumption	190	261	303	264	230
Exports	90	99	94	74	76
Consumption, apparent[2]	264	295	373	356	330
Price, unit value of imports, dollars per carat	0.19	0.18	0.19	0.16	0.19
Net import reliance[3] as a percentage of apparent consumption	38	55	56	53	47
Stones, natural and synthetic:					
Table Production:					
Manufactured diamond[e]	—	—	—	—	—
Secondary	0.10	0.08	0.08	0.08	0.08
Imports for consumption	0.51	0.33	0.79	0.38	0.34
Exports	0.02	—	([4])	([4])	—
Consumption, apparent[2]	0.59	0.41	0.86	0.46	0.42
Price, unit value of imports, dollars per carat	8.40	13.0	8.40	14.3	11
Net import reliance[3] as a percentage of apparent consumption	83	80	91	83	81

Recycling: In 2024, the amount of diamond bort, grit, and dust and powder recycled was estimated to be 14 million carats with an estimated value of $540,000. An estimated 77,000 carats of diamond stone were recycled with an estimated value of $120,000.

Import Sources (2020–23): Bort, grit, and dust and powder; natural and synthetic: China,[5] 77%; Republic of Korea, 8%; Ireland, 5%; Russia, 3%; and other, 7%. Stones, primarily natural: India, 48%; South Africa, 30%; Russia, 9%; Australia, 4%; and other, 9%.

Tariff: Item	Number	Normal Trade Relations 12–31–24
Industrial Miners' diamonds:		
Carbonados	7102.21.1010	Free.
Other	7102.21.1020	Free.
Industrial diamonds:		
Simply sawn, cleaved, or bruted	7102.21.3000	Free.
Not worked	7102.21.4000	Free.
Grit or dust and powder of natural diamonds:		
80 mesh or finer	7105.10.0011	Free.
Over 80 mesh	7105.10.0015	Free.
Grit or dust and powder of synthetic diamonds:		
Coated with metal	7105.10.0020	Free.
Not coated with metal, 80 mesh or finer	7105.10.0030	Free.
Not coated with metal, over 80 mesh	7105.10.0050	Free.

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DIAMOND (INDUSTRIAL)

Depletion Allowance: 14% (domestic and foreign).

Government Stockpile: None.

Events, Trends, and Issues: Most natural industrial diamond is produced as a byproduct of mining gem-quality diamond. Global natural industrial diamond production was essentially the same in 2024 as in the previous year. Russia, the leading country in the production of natural industrial diamond, produced 16 million carats or 41% of total world production, followed by Botswana, 8 million carats (20%); Congo (Kinshasa), 7 million carats (18%); Zimbabwe, 4 million carats (10%); and South Africa, 4 million carats (10%). These five countries produced 99% of the world's natural industrial diamond. In recent years, mines have closed, and output has been lower as mines approach the ends of their lives. The world's largest diamond mines have matured and are past their peak production levels, and several of the largest diamond mines are expected to close in the near future. As these mines are depleted, global production is expected to decline in quantity.

In 2024, U.S. synthetic-industrial-diamond producers did not manufacture any diamond stone. The combined apparent consumption of all types of industrial diamond was essentially unchanged from that of the previous year. Domestic and global consumption of synthetic diamond grit and powder is expected to remain greater than that of natural diamond material. During 2024, imports of all types of natural and synthetic industrial diamond imports decreased by 12% from that in 2023. In 2024, China was the leading producing country of synthetic industrial diamond, followed by the United States and Russia, in descending order of quantity. These three countries produced about 99% of the world's synthetic industrial diamond. Synthetic diamond accounted for more than 99% of global industrial diamond production and consumption. Worldwide production of manufactured industrial diamond totaled more than 15.5 billion carats.

The United States is likely to continue to be one of the world's leading markets for industrial diamond into the next decade and is expected to remain a significant producer of synthetic industrial diamond as well. U.S. demand for industrial diamond is likely to be strong in the construction sector as the United States continues building, milling, and repairing the Nation's highway system. Industrial diamond is impregnated in or coats the cutting edge of saws used to cut concrete in highway construction and repair work.

World Natural Industrial Diamond Mine Production and Reserves: Reserves for Botswana, Russia, and South Africa were revised based on company and Government reports.

	Mine production		Reserves[6]
	2023	2024[e]	
United States	—	—	NA
Angola	1	1	150
Botswana	8	8	250
Congo (Kinshasa)	7	7	150
Russia	16	16	990
South Africa	4	4	85
Zimbabwe	4	4	NA
Other countries	1	1	120
World total (rounded)	41	41	1,700

World Resources:[6] Natural diamond deposits have been discovered in more than 35 countries. Natural diamond accounts for less than 1% of all industrial diamond used; synthetic diamond accounts for the remainder. At least 15 countries have the technology to produce synthetic diamond.

Substitutes: Materials that can compete with industrial diamond in some applications include manufactured abrasives such as cubic boron nitride, fused aluminum oxide, and silicon carbide. Globally, synthetic diamond, rather than natural diamond, is used for more than 99% of industrial applications.

[e]Estimated. NA Not available. — Zero.

[1]See the Gemstones chapter for information on gem-quality diamond.

[2]Defined as manufactured diamond production + secondary diamond production + imports – exports.

[3]Defined as imports – exports.

[4]Less than 500 carats.

[5]Includes Hong Kong.

[6]See Appendix C for resource and reserve definitions and information concerning data sources.